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| 1) State what you want to know. |  |
| 2) Describe the **response variable.** What will you measure and how will you measure it? What data will you produce? |  |
| 3) Specify the **factor** and factor levels**.** That is, what is the key difference between the **study** and **control** groups? |  |
| 4) What **confounds** might be present? How can you reduce them? |  |
| 5) Design a good experiment. | (a) **Control** any sources of variability you know of and you can control.   * What are some sources of variability that you can control? How can you control them? * Are there sources of variability that you cannot control?   (b) **Replicate** by including multiple individuals within each group. How many?  (c) **Randomly assign** participants to each group. How could you do so in R? |
| 6) Diagram your design. |  |
| 7) Specify how will you visualize and compare the results between groups. |  |
| 8) Predict the outcomes. What do you expect to find? |  |